

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of manufacturing a photomultiplier tube having a faceplate, a photocathode for emitting electrons in response to light incident on the faceplate, an electron multiplying section for multiplying the electrons emitted from the photocathode, an anode for outputting an output signal based on the electrons multiplied by the electron multiplying section, a stem plate for fixedly supporting the electron multiplying section and the anode with stem pins, and a side tube with the stem plate fixed on one open end and the faceplate fixed on the other open end and enclosing the electron multiplying section and the anode, the method comprising the steps of:

providing a metal side tube formed of metal and a stem plate such that at least a portion contacting the metal side tube is formed of metal;

aligning the metal side tube with the stem plate so that an outer surface of the metal side tube is flush with an edge surface of the stem plate, wherein the entirety of the outer surface of the metal side tube is substantially in parallel with an axial direction of the metal side tube when aligned; and

fusing the metal side tube to the stem plate at a point of contact between the metal side tube and the stem plate by laser welding or electron beam welding to form an airtight vessel.

2. (Currently Amended) The method of manufacturing a photomultiplier tube as recited in claim 1, wherein the metal side tube is engaged with the stem plate such that only the outer surface of the metal side tube is exposed on an outer surface of the airtight vessel formed from the metal side tube and the stem ~~plate~~plate by laser welding or electron beam welding.

3. (Previously Presented) The method of manufacturing a photomultiplier tube as recited in claim 1, wherein the metal side tube is engaged with the stem plate such that the outer surface of the metal side tube and at least a portion of an outermost edge of the stem plate are exposed on an outer surface of the airtight vessel formed from the metal side tube and the stem plate by laser welding or electron beam welding.

4. (Currently Amended) A photomultiplier tube comprising:

- a faceplate;
- a photocathode for emitting electrons in response to light incident on the faceplate;
- an electron multiplying section, disposed inside an airtight vessel, for multiplying the electrons emitted from the photocathode; and
- an anode for outputting an output signal based on the electrons multiplied by the electron multiplying section, wherein the airtight vessel comprises:
 - a stem plate for fixedly supporting the electron multiplying section and the anode with stem pins;
 - a metal side tube with the stem plate fixed on one open end, and enclosing the electron multiplying section and the anode, the entirety of an outer surface of the metal side tube being substantially in parallel with an axial direction of the metal side tube; and

the faceplate fixed on the other open end of the metal side tube,

wherein the stem plate is welded on the one open end of the metal side tube, a top surface of the stem plate contacting a bottom end of the metal side tube such that an outer surface of the metal side tube is flush with an edge surface of the stem plate, at least a portion of the top surface of the stem plate in contact with the metal side tube being formed of metal.

5. (Previously Presented) The photomultiplier tube as recited in claim 4, wherein a cutout portion is formed in the top surface on an edge of the stem plate for supporting the bottom end of the metal side tube.

6. (Previously Presented) The photomultiplier tube as recited in claim 4, wherein the metal side tube is fusion welded to the stem plate.

7. (Previously Presented) The photomultiplier tube as recited in claim 6, wherein the fusion welding is laser welding or electron beam welding.

8. (Previously Presented) The photomultiplier tube as recited in claim 4, wherein the entirety of the stem plate is formed of metal.

9. (Previously Presented) The photomultiplier tube as recited in claim 4, wherein the stem plate comprises a metal stem support member, and a glass stem plate, the metal stem support member being in contact with the bottom end of the metal side tube extending substantially in an axial direction of the metal side tube.

10. (Currently Amended) A radiation detector comprising:
a scintillator for emitting fluorescent light in response to radiation generated from an object of analysis;
a plurality of photomultiplier tubes, each having a faceplate disposed in opposition to the scintillator, for outputting electric charges based on fluorescent light emitted from the scintillator; and
a position calculating section for performing calculations on the electric charges output from the plurality of photomultiplier tubes and outputting positioning signals of radiation issued in the object of analysis,
wherein each of the plurality of the photomultiplier tubes comprises:
a photocathode for emitting electrons in response to light incident on the faceplate;

an electron multiplying section, disposed inside an airtight vessel, for multiplying the electrons emitted from the photocathode; and

an anode for outputting an output signal based on the electrons multiplied by the electron multiplying section, and wherein

the airtight vessel comprises:

a metal stem plate for fixedly supporting the electron multiplying section and the anode with stem pins;

a metal side tube with the metal stem plate fixed on one open end, and enclosing the electron multiplying section and the anode, the entirety of an outer surface of the metal side tube being substantially in parallel with an axial direction of the metal side tube, wherein the metal stem plate is fixed by welding to the metal side tube such that an outer surface of the metal side tube is flush with an edge surface of the stem plate; and

the faceplate fixed on the other open end of the metal side tube.

11. (Previously Presented) The method of claim 1, wherein the metal side tube is shaped substantially like an angular cylinder.

12. (Previously Presented) The photomultiplier tube of claim 4, wherein the metal side tube is shaped substantially like an angular cylinder.

13. (Previously Presented) The photomultiplier tube of claim 10, wherein the metal side tube is shaped substantially like an angular cylinder.